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Intellectually Humble, but Prejudiced People. A Paradox of Intellectual Virtue

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Abstract

Intellectual humility has attracted attention in both philosophy and psychology. Philosophers have clarified the nature of intellectual humility as an epistemic virtue; and psychologists have developed scales for measuring people's intellectual humility. Much less attention has been paid to the potential effects of intellectual humility on people's negative attitudes and to its relationship with prejudice-based epistemic vices. Here we fill these gaps by focusing on the relationship between intellectual humility and prejudice. To clarify this relationship, we conducted four empirical studies. The results of these studies show three things. First, people are systematically prejudiced towards members of groups perceived as dissimilar. Second, intellectual humility weakens the association between perceived dissimilarity and prejudice. Third, more intellectual humility is associated with *more* prejudice overall. We show that this apparently paradoxical pattern of results is consistent with the idea that it is both psychologically and rationally plausible that one person is at the same time intellectually humble, epistemically virtuous and strongly prejudiced.

Keywords Intellectual humility · Prejudice · Out-groups · Epistemic virtue · Epistemic insidiousness

"There are few people whom I really love, and still fewer of whom I think well and every day confirms my belief of the inconsistency of all human characters, and of the little dependence that can be placed on the appearance of merit or sense." Jane Austen *Pride and Prejudice*

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1 Introduction

Imagine that you are an acclaimed psychologist. You have won many international prizes and you have an unmatched knowledge of social psychology. You are aware of your sharp intelligence and knowledge, but you do not cast yourself before other colleagues and laypeople to show off your superior intellectual skills. You do not care about the social or economic status you may gain due to your knowledge and intellectual skills. You are generally open-minded, tolerant and modest; you have many interests beyond psychology and a keen desire to learn new things; in fact, you believe that there is always something worthwhile to learn from other people, from their knowledge and viewpoints about the world. You also believe that you are ignorant of a great many topics and that you have several intellectual limitations. You are convinced that it is okay to ask for help when you do not know how to solve a problem—including problems in psychological science—or to acknowledge you made a mistake—including mistakes in addressing questions in social psychology.

According to a family of virtue approaches to epistemology (Code 1987; Montmarquet 1993; Zagzebski 1996, 155; Roberts and Wood 2003; Sosa 2007), these traits constitute an intellectual virtue, the virtue of *intellectual humility* (for reviews see Snow 2018; Tangney 2000). Because intellectual humility distinctively furthers the attainment of epistemic goods, it differs from other forms of humility, which concern, more broadly, one's relationship towards the world or other people (Bommarito 2018). Intellectual humility would distinctively help people figure out how to appropriately pursue and weigh epistemic goods like understanding, knowledge and true belief. For example, other things being equal, if you have a higher degree of intellectual humility than another person, then you will have a stronger intrinsic motivation to learn new things from other people, you will acknowledge your intellectual limitations more readily and you will recognize the merits of others people's views more easily, even when these people have views and values that differ substantially from your own.

But now suppose that you cannot stand philosophers. While you feel cold towards philosophers as a social group, you perceive them as very dissimilar to your own group of psychologists. You believe that their views about the world and values are very different from your own. Sometimes you interact with philosophers, but you generally prefer to avoid them, even though this means you are going to miss out on relevant informants about philosophical questions you care about. In short, you are prejudiced towards philosophers; and, according to many approaches to epistemology, being prejudiced is an *intellectual vice* that can impede the attainment of epistemic goods. For example, prejudice may reduce your intrinsic motivation to find things out, to recognize your own intellectual limitations and to acknowledge the merits of other people's views (Zagzebski 1996, 152; Cassam 2016; Kidd 2017). Prejudice may specifically lead you "to give a deflated level of credibility to a speaker's word", whereby you unjustly wrong other people in their capacity as knowers (Fricker 2007, 1).

Perhaps, you find nothing puzzling about the psychologist we have described. After all, intellectual humility might be specific to just some domains of inquiry, topics or worldviews shared by certain social groups. For example, if you are intellectually humble in the domain of social psychology, that does not mean that you must be intellectually humble in any other domain of inquiry, or towards any view shared by any social group (Davis et al. 2016; Hoyle et al. 2016).

Although intellectual humility could be a domain-specific character trait, there are three sets of considerations that call into question both the psychological plausibility and the rational possibility that the social psychologist we have described is at the same time intellectually humble, epistemically virtuous and strongly prejudiced.¹ First, ‘being prejudiced’ and ‘being intellectually humble’ seem to have opposite meaning. Focusing on synonyms and antonyms of ‘intellectual humility’ from the [thesaurus.com](https://www.thesaurus.com) database, Christen et al. (2014) found that ‘prejudiced’ is one of the most common words opposite in meaning to ‘intellectually humble’ (see also Alfano et al. 2017). Similarly, Gregg et al. (2008) surveyed everyday conceptions of the meaning of ‘being modest’. They found that prototypical features of individuals described as ‘modest’ include ‘being humble’ and ‘not prejudiced’. So, there is evidence that being prejudiced is ordinarily considered to be one distinctive way in which people can fail to be intellectually humble.

Second, several philosophical accounts of intellectual humility predict that intellectually humble people are overall less prejudiced than people who lack intellectual humility. According to Church and Samuelson’s (2017) doxastic account, for example, intellectual humility is a domain-general trait, which consists in “the virtue of accurately tracking what one could non-culpably take to be the positive epistemic status of one’s own beliefs” (25).² On this account, people’s degree of intellectual humility would be determined by their higher order attitudes towards both their own views and attitudes, and the views and attitudes of other people (see also Hazlett 2012; Church 2016). While Church and Samuelson (2017, Ch. 5) suggest that intellectual humility might function as a corrective of many cognitive biases, they claim that failure at intellectual humility “feeds prejudice” (Church and Samuelson 2017, 234–5). If this is true, then we should expect that intellectual humility and prejudice are negatively correlated across many different domains.

Another prominent account of intellectual humility is Whitcomb et al.’s (2015) limitation owning account. According to this account, intellectual humility is a domain-general trait, which “consists in proper attentiveness to, and owning of, one’s intellectual limitations” (520). People’s degree of intellectual humility would then be determined by their intellectual abilities, particularly by their attention and also by their attitudes towards their own intellectual limitations (see also Rushing 2013). Whitcomb et al. (2015) explain that owning to one’s intellectual limitations “characteristically” involves a series of motivational and cognitive dispositions, including the disposition “to care about their limitations and take them seriously” (519). If one person is disposed “to care about” and “take seriously” their own intellectual limitations, such as one’s ignorance about certain topics, difficulties in reasoning about certain problems and unreliable memory, then this person should be less prejudiced towards diverse groups of people and their different views and values (cf., Driver 1989; Roberts and Wood 2007; Spiegel 2012; Tanesini 2018, for accounts emphasizing the social-motivational dimension of intellectual humility). If this is true, then we should once again expect a

¹ By ‘psychological plausibility’, we mean the plausibility actual people are genuinely intellectually humble but also systematically prejudiced towards others. By ‘rational possibility’, we mean the possibility a person can rationally be both intellectually humble and strongly prejudiced.

² Humility, however, does not feature on Aristotle’s list of virtues, but the ideal of *metriotes* (moderation) is a close kin (Aristotle, 350 BCE/2009). Next to that, when considering the New Testament, the usage of *arete* (virtue or excellence) is used considerably less than *tapeinosis* (lowness, spiritual abasement).

negative association between people's degree of intellectual humility and the strength of their prejudice towards members of groups perceived as having different views. So, based on existing philosophical accounts, we can hypothesize that if I am prejudiced towards members of a group, then I am liable to exhibit intellectual vice towards them, for example in the form of testimonial epistemic injustice as we explain below. This is not a conceptual or necessary connection, but a highly plausible empirical generalization we set out to test.

Third and finally, existing literature in social psychology shows that the general trait of intellectual humility is associated with such personality traits as "Openness to experience", "Conscientiousness" and "Agreeableness" of the Five-Factor Model (McCrae and Costa 1987), and the "Honesty-Humility" dimension of the HEXACO model (Ashton and Lee 2005). Openness, Agreeableness and Honest-humility, in particular, tend to be related to lower levels of prejudice (Sibley and Duckitt 2008; Sibley et al. 2010). Intellectual Humility scales also tend to be moderately related to tolerance of other people and their viewpoints, to lower levels of authoritarianism (e.g., Krumrei-Mancuso 2018) and dogmatism (e.g., Leary et al. 2017), which are two constructs that are often linked with prejudice and epistemic vice (Sibley and Duckitt 2008; Cassam 2016).

Specifically, Krumrei-Mancuso and Rouse (2016) developed the *Comprehensive Intellectual Humility* scale, which defines intellectual humility as "a nonthreatening awareness of one's intellectual fallibility" (210). Krumrei-Mancuso and Rouse's (2016) operationalized this definition with four subscales that are meant to tap distinct facets of intellectual humility: "Openness to revising one's viewpoints", "Lack of overconfidence about one's knowledge", "Respect for the viewpoints of others" and "Lack of threat in the face of intellectual disagreements" (Table 1).

Leary et al. (2017) propose an alternative scale. Defining intellectual humility as "an appropriate attentiveness to limitations in the evidentiary basis of [one's] beliefs and to one's own limitations in obtaining and evaluating relevant information" (Leary et al. 2017, 793), their scale includes items like "I question my own opinions, positions, and viewpoints because they could be wrong" and "I recognize the value in opinions that are different from my own". In both of these scales, intellectually humble people are expected to be non-threatened by different views, open to revising one's views, and respecting and valuing other's differing views.

These links with personality traits and worldviews associated with openness and tolerance provide us with converging evidence that existing intellectual humility scales construe intellectual humility as an intellectual virtue and that we should expect a negative association between people's degree of intellectual humility and the strength of their prejudice (Krumrei-Mancuso and Rouse 2016; Leary et al. 2017).

In particular, we should expect that intellectual humility buffers the association between disagreeing with a person perceived as very different from ourselves and being prejudiced towards that person. The association between perceived *attitudinal dissimilarity* and *prejudice* is one of the most robust findings in social psychology. Early work focused on the relationship between perceived similarity and liking (Byrne 1969). This work consistently showed that when an individual was described as having more similar beliefs and attitudes to participants, the participants liked the individual more (for a meta-analysis see Montoya et al. 2008). Contemporary theoretical perspectives are also consistent with this idea (e.g., Wynn 2016), although they often assess the

Table 1 Krumrei-Mancuso and Rouse's (2016) 22-items scale

Independence of Intellect and Ego	
I feel small when others disagree with me on topics that are close to my heart	
When someone contradicts my most important beliefs, it feels like a personal attack	
When someone disagrees with ideas which are important to me, it feels as though I'm being attacked	
I tend to feel threatened when others disagree with me on topics that are close to my heart	
When someone disagrees with ideas that are important to me, it makes me feel insignificant	
Openness to revising one's viewpoints	
I am open to revising my important beliefs in the face of new information	
I am willing to change my position on an important issue in the face of good reasons	
I am willing to change my opinions on the basis of compelling reason	
I have at times changed opinions that were important to me, when someone showed me I was wrong (25)	
I'm willing to change my mind once it's made up about an important topic	
Lack of Intellectual Overconfidence	
My ideas are usually better than other people's ideas	
For the most part, others have more to learn from me than I have to learn from them	
On important topics, I am not likely to be swayed by the viewpoints of others	
Listening to perspectives of others seldom changes my important opinions	
When I am really confident in a belief, there is a very little chance that this belief is wrong	
I would rather rely on my own knowledge about most topics, than turn to others for expertise	
Respect for other's viewpoints	
I can have great respect for someone even when we don't see eye-to-eye on important topics	
I am willing to hear others out, even if I disagree with them	
I welcome different ways of thinking about important topics	
I respect that there are ways of making important decisions that are different from the way I make decisions	
I can respect others, even if I disagree with them in important ways	
Even when I disagree with others, I can recognize that they have sound points	

links between perceived dissimilarity and prejudice (i.e. the opposites of similarity and liking). For example, multiple lines of research in social psychology have examined how perceiving that members of a given group hold different values and worldviews is associated with prejudice towards those group members (Haddock et al. 1993; Henry and Reyna 2007; Riek et al. 2006; De Rooij et al. 2018; Sidanius et al. 2016; Stephan et al. 2000; Stephan et al. 1998; Velasco González et al. 2008). Some of these contemporary lines of research explicitly build on the earlier work of Byrne (1969), and, overall, they demonstrate that the perceived attitudinal and value dissimilarity of a target group is associated with prejudice towards that target group (Brandt et al. 2015; Brandt and Crawford *in press*).

There is, however, good reason to qualify the hypothesis that intellectual humility buffers the positive association between perceived attitudinal dissimilarity and prejudice. Consider a trait correlated with intellectual humility, Openness to experience. As noted above, Openness tends to be associated with lower levels of prejudice (e.g., Sibley and Duckitt 2008). However, social psychologists have recently pointed out that the research supporting this association typically only measures prejudice towards a limited number of target groups and these target groups tend to be relatively unconventional or low status groups (e.g., racial minorities, members of the LGBTQ community, immigrants) (Brandt et al. 2015; Brandt and Crawford 2019; Crawford and Brandt 2019). When the range of target groups is expanded to include conventional target groups (e.g., religious people, political conservatives), people who are high in

Openness appear to express prejudice towards these groups (Brandt et al. 2015). Said another way, people both high and low in Openness tend to express prejudice, but towards different groups. Moreover, the correlation between perceived dissimilarity and prejudice was either not different or *higher* among people high in Openness compared to those low in Openness. That is, although Openness is also expected to index people's openness to people with different views, the best evidence suggests that this is not the case. This may also extend to intellectual humility, complicating its relationship with prejudice and its status as an intellectual virtue.

In summary, on the basis of the linguistic, philosophical and psychological considerations we have reviewed, we set out to test two hypotheses: first, that intellectual humble people are generally less prejudiced than non-intellectually humble people; second, that intellectual humility buffers the association between perceived dissimilarity and prejudice.

We tested these hypotheses on the basis of data from four studies. In all four studies we used Krumrei-Mancuso and Rouse's (2016) scale for measuring intellectual humility (henceforth, IH), which had previously shown high reliability. Consistently with existing work in philosophy and psychology, we defined *prejudice* as a negative evaluation of a group or an individual based on group membership (e.g., Aronson et al. 2010; Begby 2013; Brown 2010; Crandall et al. 2002; Fricker 2007). Although some forms of prejudice focus on particular types of target groups (e.g., low status groups; Bergh et al. 2016) or on negative evaluations that are inaccurate or unjustified (Allport 1954), our studies focused on the key psychological phenomenon, *group-based negative evaluations*, as it occurs across a range of target groups. Understood in terms of this key psychological phenomenon, prejudice has been characterized as an *epistemic vice* that impedes the pursuit of epistemic goods (Anderson 2012; Battaly 2017; Cassam 2016). Having negative feelings or attitudes towards others based on their group membership is often associated with having the thought that the epistemic status of their beliefs or their cognitive abilities are better than those of others (e.g., Alicke and Govorun 2005); and having negative feelings or attitudes towards others based on their group membership can contribute to testimonial injustice, where hearers give deflated credibility to the word of a speaker owing to identity prejudice on the hearers' part, overlooking the merits of others' testimony (Fricker 2007, Ch. 2).

2 General Overview of the Studies

The four studies we conducted consisted of two parts. In the first part, we measured participants' levels of prejudice and perceived dissimilarity towards a variety of other social groups. In the second part of the studies, we measured participants' level of IH. This allowed us to test if IH is associated with overall levels of prejudice and it moderates the association between perceived dissimilarity and prejudice. Because of the similarity between the four studies, we first describe the method of all of the studies, noting their differences. Then, we describe the data analysis of each one of the four studies separately. Importantly, because of the similarity of the four studies, we also meta-analyzed the results and evaluated our two hypotheses on the basis of the pattern of statistically significant associations we found in the meta-analysis. Data and code are available here: <https://osf.io/k5qmw/>

3 Method

3.1 Participants

Study 1 Sixty students, from a large Dutch university, participated in this study in exchange for course credit. We recruited as many participants as was possible during the academic term. The participant pool consisted of students enrolled at the School of Humanities, which includes both bachelor and master students studying topics from Communication and Information Sciences to Philosophy. The average age was 22.3 years ($SD = 4.6$), as 90% of the participants were between the ages 18–24. 70% of the sample were females and 80% were Dutch nationals with college-level proficiency in English. The language of the study was English.

Study 2 Three hundred and one participants completed a survey on Amazon MTurk in exchange for \$0.50. We aimed to collect data from more than 250 participants, the sample size at which correlations tend to stabilize (Schönbrodt and Perugini 2013). Additional data was collected to guard against possible missing data. The average age was 37.17 ($SD = 12.0$). 48% of the sample identified themselves as female. The task on MTurk was opened to participants with an approval rate 90% or greater, 100 completed HITs, and who were from the United States. The task took approximately 12 min.

Study 3 Three hundred and forty-seven participants completed a survey on Amazon MTurk in exchange for \$0.50. Additional participants were collected compared to Study 2 because of the added experimental condition (see below). The average age was 36.51 ($SD = 11.24$). 55.6% of the sample identified themselves as female. All participants were proficient English speakers, and the survey was in English. The task on MTurk was opened to participants with an approval rate 90% or greater, 100 completed HITs, and who were from the United States. The task took approximately 12 min.

Study 4 Four hundred and thirty-one participants took part in this study and were recruited through Amazon MTurk in exchange for \$0.50.³ The average age was 36.45 ($SD = 11.39$). 55% of the sample identified themselves as female. All participants had proficiency in English, and the survey was conducted in English. The task on MTurk was opened to participants with an approval rate 90% or greater, 100 completed HITs, and who were from the United States. The task took approximately 12 min.

3.2 Procedure & Measures

Study 1 Each participant named between 10 and 15 social groups. A ‘social group’ was explicitly characterized in these terms: “People belong to social groups either because they have a specific characteristic that is seen as typical for a social group or because they have chosen to become part of a social group. Thus, some social groups are based

³ We collected additional data because we had leftover funds in our budget.

on how people are, while others are based on how people behave or see the world” (Koch et al. 2016, 678).

Next, participants reported the degree of their perceived attitudinal dissimilarity from members of those groups and their level of prejudice towards members of those groups. We measured participants’ prejudice towards the groups with “feeling thermometer” ratings on a scale from 0 to 100 (0 = Very cold / Quite dislike; 100 = Very warm / Quite like; 50 = Neutral / Neither dislike nor like). Feeling thermometers are a widely used, reliable measure of prejudice in the psychology literature (Correll et al. 2010) that map onto the definition of prejudice as negative evaluations based on group membership. To measure dissimilarity, we asked each participant to rate on a scale from 0 to 100 the extent to which they perceived each social group as having attitudes, values, or political or social beliefs dissimilar from their own (0 = Not at all different; 100 = Very different), a measure also previously used in psychological research (e.g., Brandt et al. 2015).

Finally, each participant completed Krumrei-Mancuso and Rouse’s (2016) measure of IH. Krumrei-Mancuso and Rouse’s (2016) IH scale demonstrated good reliability across the four studies (α ’s range from .84 to .90). Its factors also showed good reliability, with Cronbach’s alpha varying between .67 and .90 across the four studies.⁴

Study 2 Study 2 replicated Study 1 in a new sample.

Study 3 There were two key changes in this study. First, we changed how target groups were determined. Unlike in Study 1 and 2, participants were not asked to report their prejudice and dissimilarity regarding social groups they listed, but instead we used the forty most frequently named social groups in the U.S. as the target groups (groups are from Koch et al. 2016, 692) (see Table 2 for a list of groups. See Table S5 in the Online Supplemental Materials for the correlation between intellectual humility and prejudice for each of the groups).

Second, we introduced a within-participant manipulation of cognitive load in the form of time pressure. The reason why we introduced this manipulation was to evaluate Church and Samuelson’s (2017, 139) suggestion that epistemic vices might depend on a breakdown between Type 1 and Type 2 psychological processes, where Type 1 processes are typically understood as being intuitive, fast, automatic, nonconscious, effortless, contextualized, and error-prone, and Type 2 as reflective, slow, deliberate, cogitative, effortful, decontextualized, and normatively correct (Sloman 1996; Kahneman 2011; Evans and Stanovich 2013). By burdening participants’ cognitive resources with time pressure while they were making judgements, we aimed at reducing the possibility they could recruit Type 2 processes (e.g., De Neys 2006; Evans and Curtis-Holmes 2005). We thus predicted participants under cognitive load would show higher levels of prejudice and a stronger association between dissimilarity ratings and prejudice scores, regardless of their level of IH. This experimental manipulation did not have any significant effects and did not moderate any of the reported associations. Therefore, we do not discuss it further.

⁴ In all studies, we also included items for an alternative IH scale that we were developing. However, given the unvalidated status of our scale and the consistent results across scales, we only report the results using the Krumrei-Mancuso & Rouse scale.

Table 2 Forty most frequently named social groups of the U.S., used in Study 3 (Koch et al. 2016, 692)

Blacks	Republicans	Students	Hippies	Politicians
Whites	Gays	Lesbians	Immigrants	Jocks
Poor people	Christians	Women	Atheists	Hipsters
Asians	Parents	Teenagers	Blue collar	Celebrities
Rich people	Conservatives	Muslims	Religious people	Drug addicts
Hispanics	Liberals	Athletes	Men	Homosexuals
Democrats	Elderly	Nerds	White collar	Homeless people
Middle class people	Transgender people	Working class people	Upper class people	Jews

Study 4 This study differed from Study 3 in two ways. First, it did not include the cognitive load manipulation. Second, half of the participants made ratings of the target social groups sequentially, one group per page (See Table S6 in the Online Supplemental Materials for the correlation between intellectual humility and prejudice for each of the groups). The other half of the group rated the social groups while they were all presented on a single page. The reason why we introduced this difference was to ensure the results from the first three studies did not depend on the difference in the display of the social groups: sequentially vs. all on a single page. This experimental manipulation did not have any significant effects and did not moderate any of the reported associations. Therefore, we do not discuss it further.

3.3 Results

Participants in our studies completed measures of dissimilarity and prejudice towards multiple target groups. This means that the data are multilevel, with the measures of dissimilarity and prejudice nested within participants. To assess how prejudice is associated with dissimilarity and if IH moderates this association we need to take this multilevel structure into account. Therefore, we used multilevel models.

In each study, we regressed prejudice on perceived dissimilarity (mean-centered within participants), intellectual humility (grand-mean centered) and their interaction. The effect of perceived dissimilarity tells the size and direction of the average linear relationship between dissimilarity and prejudice within participants. The effect of intellectual humility tells us whether people with higher or lower levels of IH express more prejudice overall (across all of the groups). And the interaction effect tells us if the effect of dissimilarity on prejudice is different in size for people higher or lower in IH. We conducted separate analyses for the full IH scale and for each facet of the IH scale (5 analyses in total). The results for each individual study are presented in Tables S1-S4 in the Online Supplemental Materials. Because the key effect of interest is the same in each study, we conducted a fixed-effects meta-analysis using the *rma* function in the R package *metafor* (Viechtbauer 2010) that computes a meta-analytic average across all of the effects in each analysis reported in all four studies. This allows us to focus on the effects that emerge consistently across studies and take advantage of all of the available data when presenting the results. These results can be found in Table 3. See Goh et al. (2016) for additional information about the benefits of such a “mini meta-analysis”.

Table 3. Results Meta-analysis

Measure of IH	Effect	<i>B</i>	<i>SE</i>
Full Krumrei-Mancuso and Rouse's (2016) IH scale	Intercept	38.151	.448
	Perceived Dissimilarity	.370	.017***
	Intellectual Humility	4.398	.635***
	Perceived Dissimilarity * Intellectual Humility	-.051	.024*
<i>Krumrei-Mancuso & Rouse Subscales</i>			
Independence of Intellect and Ego	Intercept	38.169	.453
	Perceived Dissimilarity	.371	.017***
	Intellectual Humility	1.284	.341***
	Perceived Dissimilarity * Intellectual Humility	-.016	.013
Openness of Revising One's Viewpoints	Intercept	38.161	.457
	Perceived Dissimilarity	.367	.017***
	Intellectual Humility	1.357	.454**
	Perceived Dissimilarity * Intellectual Humility	-.032	.017
Respect for Other's Viewpoints	Intercept	38.115	.444
	Perceived Dissimilarity	.371	.017***
	Intellectual Humility	3.809	.475***
	Perceived Dissimilarity * Intellectual Humility	-.050	.019**
Lack of Intellectual Overconfidence	Intercept	38.182	.455
	Perceived Dissimilarity	.373	.017***
	Intellectual Humility	1.848	.488***
	Perceived Dissimilarity * Intellectual Humility	-.002	.018

Note. * $p < .05$. ** $p < .01$. *** $p < .001$

Across all of the different models, we find that perceived dissimilarity is always robustly and positively associated with prejudice. That is, the more a participant perceives a group to have dissimilar attitudes and values, the more prejudice they express towards that group. The effect size is equivalent to an approximately 37 point (out of 100) difference in prejudice between a maximally similar vs. a maximally dissimilar target group.⁵

We also find, across all of the different models, that more intellectual humility is associated with more prejudice on average across all of the different target groups. That is, the higher a participant score on the measures of intellectual humility, the more prejudice they express on average across all of the groups. For the full scale, the effect size is equivalent to an approximately 26 point (out of 100) difference in prejudice between a maximally intellectually humble vs. a minimally intellectually humble

⁵ There are not agreed upon standardized effect sizes for multilevel models. Therefore, we report unstandardized effect sizes and their translation into scale points for reference.

participants. The effect size is smaller, but in the same direction, for the intellectual humility subscales (range [7.7, 22.9] scale points). The higher people are on IH, the colder they are likely to say they are towards other people from all of the other groups. This result was unexpected.

Importantly, in two models, we find a significant negative interaction between perceived dissimilarity and intellectual humility. This negative interaction means that participants who have higher scores on the intellectual humility measures have weaker associations between perceived dissimilarity and prejudice. For example, when considering the full IH scale the effect is $B = .370$ for people with average levels of IH, consistent with the approximately 37 point (out of 100) difference in prejudice between a maximally similar vs. a maximally dissimilar target group reported above. However, for people who are 2-scale points (on a 7-point) scale above the average (i.e. more IH than average), the effect is $B = .268$, consistent with the approximately 27 point (out of 100) difference in prejudice between a maximally similar vs. a maximally dissimilar target group. For people who are 2-scale points (on a 7-point) scale below the average (i.e. less IH than average), the effect is $B = 0.472$, consistent with the approximately 47 point (out of 100) difference in prejudice between a maximally similar vs. a maximally dissimilar target group. That is, the link between dissimilarity and prejudice in people particularly high in IH is approximately 43% of the strength of the association among people particularly low in IH. People high in IH show a weaker connection between the perception that a group shares different attitudes and values and their evaluation of that group.

To help visualize these results, we plot the model estimate from Study 4 in Fig. 1. We choose Study 4 for this illustration because its coefficients were the most similar to the coefficients from the meta-analysis. We plot the effect of perceived dissimilarity on prejudice for people both 1SD above and 1SD below the intellectual humility measure using the full Krumrei-Mancuso and Rouse's (2016) IH scale ($SD = .68$). This plot makes it clear that the effect of perceived dissimilarity on prejudice is flatter for people with higher levels of intellectual humility compared to those with lower levels of intellectual humility. This effect, however, is not because intellectual humility is related to lower levels of prejudice for people they disagree with. Instead, the flatter association between perceived dissimilarity and prejudice appears to be due to the greater prejudice people with high levels of intellectual humility express towards people they agree with (i.e. low levels of perceived dissimilarity).

4 Discussion

In four studies, we examined the relationships between three psychological variables: people's perceived dissimilarity of a target group, prejudice towards members of a group and general intellectual humility. Overall, we found a consistent pattern of three findings, which are relevant to evaluate our two hypotheses: first, intellectual humble people are generally less prejudiced than non-intellectually humble people; and second, intellectual humility buffers the association between perceived dissimilarity and prejudice.

Across all four studies, participants' perceived dissimilarity of other groups was positively associated with their level of prejudice towards members of those groups.

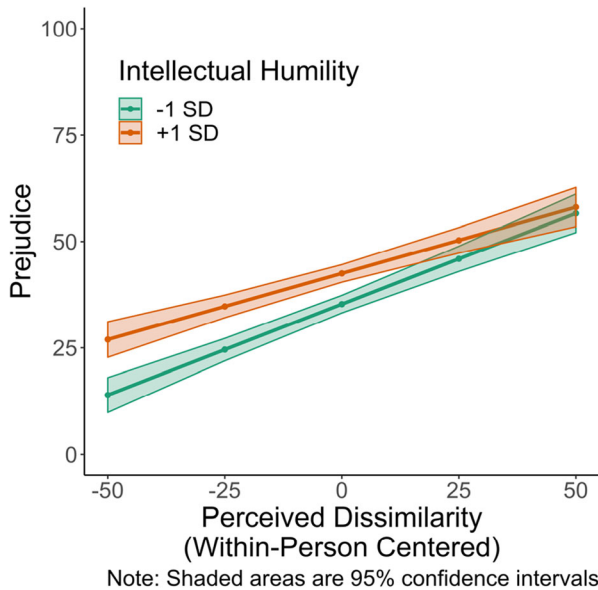


Fig. 1 Study 4: Estimate of the interaction between perceived dissimilarity and intellectual humility when predicting prejudice

Second, across all studies, we found moderating effects of IH on the dissimilarity-prejudice association. That is, intellectually humble participants showed a weaker association between perceived dissimilarity and prejudice. Third and finally, across all studies, we did not find any negative main effect of IH on people's prejudice. That is, we did not find any evidence that one's level of IH is negatively associated with the strength of one's prejudice towards other individuals or groups. Instead, we consistently found the opposite.

The first finding provides independent support to an already well-established association in social psychology. The other two findings bear out that people high in IH present a weaker association between dissimilarity and prejudice than people low in IH, and that people high in IH need not be in any way less prejudiced than people low in IH.

The moderating effect of IH on the dissimilarity-prejudice link displays IH as an epistemic virtue, as a character trait that promotes our pursuit of epistemic goods (Zagzebski 1996, 155). In particular, this moderating effect can be explained by all philosophical accounts of IH, and in particular by both Whitcomb et al.'s (2015) limitation owing account and Church and Samuelson's (2017) doxastic account. On the limitation owing account, intellectually humble individuals, who are appropriately aware of their intellectual limitations when the situation calls for it, are characteristically disposed to "care about" their own limitations and to "take them seriously" (Whitcomb et al. 2015, 519). In our studies, this disposition could lead participants to weaken the negative attitudes they have towards members of groups with dissimilar views from theirs. IH people would tend to be less prejudiced towards members of dissimilar groups, since this prejudice is likely to hinder responsible inquiry that recognizes an obligation "to listen to what others say and to consider their ideas"

(Whitcomb et al. 2015, 11). In this way, IH would promote responsible inquiry in the face of attitudinal dissimilarity.

The moderating effect of IH on the dissimilarity-prejudice link is also consistent with Church's (2016) and Church and Samuelson's (2017) doxastic account, where the perceived dissimilarity with members of another social group does not lead the intellectually humble to harbour a negative attitude towards those members and their views. On the doxastic account, IH is basically the virtue of valuing our own (and other people's) beliefs as they should. If a disagreement with members of another group is associated with a prejudice towards those members, *and* this prejudice can plausibly lead one to give inappropriate weight to their beliefs, then IH should weaken the association between dissimilarity and prejudice.

The finding that IH has no direct negative effect on overall levels of prejudice, but on the contrary more IH is associated with more prejudice overall, is paradoxical when juxtaposed with the finding that IH buffers the relationship between dissimilarity and prejudice. First, this result raises general questions about the relationship between intellectual virtues and vices. For example, the question of whether it is epistemically good to aim at "epistemic sainthood", where an epistemic saint can be defined as "a person whose every epistemic action is as epistemically good as possible, a person, that is, who is as epistemically worthy as can be" (cf., Wolf 1982, 419, where we have replaced 'moral' with 'epistemic').

Second, this pattern of findings is consistent with the idea that IH is a dis-unified character trait or cluster of attitudes that is always relative to a specific domain, and that need not correlate with any other traits with similar epistemic valence. So, for example, if you are intellectually humble in the domain of psychological science, that does not mean you must be intellectually humble in other subject domains such as politics, philosophy or geography (Hoyle et al. 2016). Or, if you are intellectually humble in a certain domain, that does not mean you cannot be also prejudiced, narrow-minded or pretentious in many other domains of inquiry or towards members of groups you find dissimilar (Davis et al. 2016).

Third and most interestingly, if people high in IH show overall higher levels of prejudice towards members of other social groups, we can still consider IH as a genuine epistemic virtue. We can appreciate this point from different angles. Let's start by considering what 'prejudice' exactly means in a study like ours. Prejudice, in the way it is typically defined and studied in social psychology (e.g., Brown 2010), is a negative evaluation of a group or of an individual based on stereotypes and attributions (including epistemic attributions) that has no explicit normative connotation. That's exactly how 'prejudice' was defined and measured in our study. Understood as this species of negative attitude, prejudice may be justified in some cases. When it is justified, we should expect that people high in IH should be *more* prejudiced overall. For example, the imaginary intellectually humble social psychologist we described at the beginning of this paper might have good evidence that philosophers are generally disagreeable, narcissistic and unreliable. The psychologist might have gained this evidence from some previous personal interaction with few philosophers working at their university, or from the testimony of trustworthy friends who are knowledgeable of the epistemically appalling status of some areas of professional philosophy. If this evidence is sufficiently reliable and strong, then it would provide our social psychologist with a good

reason to be prejudiced towards philosophers, and forego any epistemic good that might accrue from interacting with them.

Even if our intellectually humble psychologist has no good evidence for the prejudice towards philosophers, this prejudice need not impede the psychologist's pursuit of epistemic goods. Cassam (2016 167–9) describes the example of a journalist prejudiced towards politicians, whose prejudice made him “less likely to be misled by the pronouncements of mendacious politicians” (167). Because of, and not despite, this prejudice, the journalist could acquire and retain knowledge in the face of actual, widespread insincerity in the political realm. Although Cassam argues that ‘prejudice’ in this case would be better characterized as “an empirically grounded heuristics”, the journalist need not have any experience of politics or evidence of the insincerity of politicians for this heuristic to be reliable.

Selective trust, exclusively based on in-group/our-group affiliation (Foddy et al. 2009), can promote successful and responsible inquiry on the basis of a division of cognitive labour and also by helping us filter quickly, and sometimes reliably, the information that we receive from others (see e.g. Sperber et al. 2010 on how what they call ‘epistemic vigilance’ can promote a variety of epistemic goals). Thus, prejudice need not always hamper our pursuit of epistemic goals. Sometimes, it can actually foster those goals.

In fact, one might expect that IH reasonably and appropriately generates prejudice under certain circumstances. In particular, if people who are high in IH also value IH, then they may be inclined to negatively judge people or social groups they take to be low in IH. For example, one reason the intellectually humble psychologist does not care for philosophers is that philosophers are not generally intellectually humble—after all, many philosophers spend their lives dogmatically defending their own views while being caustic towards others holding conflicting views. To test this view, one should focus on the variables “being intellectually humble” and “being prejudiced against those lacking in intellectual humility.” In our study, we did not measure participants’ beliefs about the level of intellectual humility of members of target groups. But, we can plausibly predict that, in polarized situations involving in-groups and out-groups, the intellectually humble in each group will be prejudiced against out-group members for lacking IH, and will also be prejudiced against members of their own group who are perceived to be lacking in IH. In-group members who are perceived to be low in IH might be even more harshly judged than out-group members low in IH, because, for example, they can and should know better. In such cases, the prejudice would be both driven by IH and based on judgments about IH (or the lack thereof).

This account could also explain the most puzzling finding in our study, namely that those high in IH express higher levels of perceived dissimilarity and prejudice across the board, while at the same time their higher level of IH weakens the dissimilarity-prejudice association. The basic idea is that those high in IH will tolerate a plurality of views and values and would not be prejudiced against those views and values. However, when the groups who hold these views and values are perceived to be low in IH, this will elicit a higher *overall* prejudicial response in those high in IH. The assumptions underlying such a possibility remain to be tested.

This basic idea would shed a new light on the question of whether IH is domain general or domain specific (or group general or group specific). IH would be a domain-specific (or group-specific) epistemic virtue only insofar as certain domains of inquiry

or groups are perceived as lacking humility. The domain (or group) specificity of the prejudice of people who are high in IH would be driven by humility-related concerns; and these domains or groups would thus be apt targets of prejudice.

It is important to point out that the account just sketched assumes that it is not the *content* of certain views that might elicit prejudice, but the *epistemic attitude* people adopt towards those views. So, a person who is high in IH might be less prejudiced against other people who hold a dissimilar view, but who are perceived as intellectually humble with respect to that view, than against people who hold a similar view, but are perceived as arrogant with respect to that view. If this is correct, then our findings might be driven not by the views associated with target social groups, but by the perceived epistemic attitudes associated with them. This relates to what one might expect when it comes to humility buffering the dissimilarity-prejudice association. When the relevant dissimilarity is with respect to epistemic attitudes towards a view, and not with respect to the content of the view per se, one might reasonably expect those high in IH to be prejudiced against precisely those who have different epistemic attitudes—even members of their own group. The differences that would matter in these individual and group level prejudices that are associated with high IH would be the differences precisely with respect to the presence or absence of IH in a target group. A simple test of this hypothesis will ask participants to rate their own levels of IH, as we did in our study. Then, they would be presented with cases of people who have the same or different views about a certain topic, but with differing levels of IH towards those views. The prediction is that the prejudice associated with IH tracks judgments about IH, not judgments about differences between views or groups per se. Another possibility we want to mention about how it may be epistemically rational for people high in IH to express higher levels of perceived dissimilarity and prejudice across the board, while at the same time their higher level of IH weakens the dissimilarity-prejudice association, appeals to a virtue Nietzsche calls “solitude” (Nietzsche 1878/1986). Solitude is a basic disposition to consider one’s community coldly, taking a critical attitude towards them, their beliefs, and values. While solitude is closely related to IH (Alfano forthcoming, Ch. 10.3), it would explain why people high in IH would not single out groups that they perceive as very dissimilar from them for particular dislike. Intellectually humble people would dislike everyone equally; and they would be more honest about their feelings, as they would aim at improving their community through cultural criticism. Because, similarly to the Nietzschean virtue of solitude, IH “opposes vices like chauvinism, narrow-mindedness, and cozy cultural smugness” (Alfano forthcoming, Ch. 1), it would be an important part of cultural critique, and may promote the attainment of valuable communal epistemic goods.

We have just discussed various testable hypotheses focused on the relationship between “being IH” and “being prejudiced towards those perceived as low in IH.” Now, we finally want to focus on the relationship between *epistemic culpability* and *prejudice*. We want to examine whether prejudice is always intellectual *vicious*, “epistemically unjust” (Fricker 2007), or “epistemically irrational” (Arpaly 2003) when directed towards certain social groups one perceives as dissimilar. First of all, Fricker’s (2007) account of testimonial injustice is specifically concerned with ways in which prejudice can influence whether people belonging to a certain social groups are believed when they speak authoritatively. Our results say nothing about whether or not prejudice systematically produces this deficit in credibility. But, it seems

psychologically plausible, as well as rationally possible, that people, who feel cold (or even hate) members of a certain group, will accept their testimony when it is authoritative. Presumably, being prejudiced towards members of a group is positively correlated with not trusting their testimony, but it is not obvious when this correlation actually holds, how strong it is, and to what extent IH may attenuate it (for some suggestive evidence see, e.g., Simon et al. 1970; Stanley et al. 2011).

Begby (2013) argues that some instances of prejudice do not entail any form of epistemic culpability, understood as a failure to respond to evidence appropriately. His argument starts by pointing out that the stereotypes constituting prejudices do not have the form of universal generalizations; instead, they are akin to generic judgements that are sometimes supported by available evidence, and that are oft accurate, helping us navigate the social world (Jussim 2012). Some of the generic judgments constituting prejudices become internalized as background beliefs. When they do, prejudices can become *epistemically insidious*, as they “quite reasonably come to control the assessment and interpretation of new evidence” (Begby 2013, 90; for some relevant empirical evidence see Lord and Taylor 2009). This means that prejudiced individuals will have different background beliefs than non-prejudiced ones. If they have different background beliefs, and these background beliefs are borne out by available evidence, then they “may reasonably differ in their assessment of the significance of new evidence” (96). The prior stereotypes and attributions constituting the prejudice are used to make sense of the new evidence, rather than being dismissed on the basis of a few pieces of contrary evidence. Prejudiced but intellectually humble people, then, may appropriately attend to all available evidence, and keep holding on to their prejudice without being epistemically culpable.

One may point out that the epistemic irrationality, in cases where prejudices become entrenched in our background beliefs, lies “upstream”, in the circumstances in which the prejudice was acquired. Begby (2013) explains that some prejudices become entrenched background beliefs based on support from multiple sources of evidence. So, again, there need not be anything irrational or culpable in acquiring a prejudice. This conclusion requires one last qualification, however, since the epistemic culpability or irrationality may concern not individuals but social institutions in such a case.

Anderson (2012) focuses her attention to structural forms of epistemic injustice, and argues that there are social institutions that culpably or irrationally foster certain prejudices and negative attitudes, for which no particular individual is epistemically culpable. The most effective remedy in this type of case—suggests Anderson—is not to stress individual virtues like individuals’ IH; it is rather to intervene on social institutions and practices of inquiry, which have global properties that are awry from both an epistemic and moral point of view. One way Anderson suggests to promote epistemic virtue at the level of global systems of inquiry is to promote structural integration, where demographically, socially and epistemically diverse communities “share equally in educational resources and thus have access to the same (legitimate) markers of credibility” (171). While this kind of integration would foster epistemic virtue at the level of epistemic systems, it may prevent individuals’ prejudices or negative affects from issuing in epistemically vicious, culpable or irrational discounting of the credibility of a person’s testimony due to her social identity.

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References

- Alfano, M. (forthcoming). *Nietzsche's Moral Psychology* Cambridge University Press.
- Alfano, M., K. Iurino, P. Stey, B. Robison, M. Christen, F. Yu, and D. Lapsley. 2017. Development and validation of a multi-dimensional measure of intellectual humility. *PLoS One* 12 (8): e0182950.
- Alicke, M.D., and O. Govorun. 2005. The better-than-average effect. In *The self in social judgment*, ed. M.D. Alicke, D. Dunning, and J. Krueger, 85–106. New York: Psychology Press.
- Allport, G.W. 1954. *The nature of prejudice*. Cambridge, MA: Addison-Wesley.
- Anderson, E. 2012. Epistemic justice as a virtue of social institutions. *Social Epistemology* 26 (2): 163–173.
- Aronson, E., T.D. Wilson, and R.M. Akert. 2010. *Social Psychology (7th)*. New York: Prentice Hall.
- Arpaly, N. 2003. *Unprincipled virtue: An inquiry into Moral agency*. Oxford: Oxford University Press.
- Ashton, M.C., and K. Lee. 2005. Honesty-humility, the big five, and the five-factor model. *Journal of Personality* 73 (5): 1321–1353.
- Battaly, H. (2017). Testimonial injustice, epistemic vice, and vice epistemology. In *The Routledge handbook of epistemic injustice* (pp. 223–231). Routledge.
- Begby, E. 2013. The epistemology of prejudice. *Thought: A Journal of Philosophy* 2 (2): 90–99.
- Bergh, R., N. Akrami, J. Sidanius, and C.G. Sibley. 2016. Is group membership necessary for understanding generalized prejudice? A re-evaluation of why prejudices are interrelated. *Journal of Personality and Social Psychology* 111 (3): 367–395.
- Bommarito, N. (2018). Modesty and Humility. In E. N. Zalta (ed.) *The Stanford Encyclopedia of Philosophy* (Winter 2018 Edition), URL = <<https://plato.stanford.edu/archives/win2018/entries/modesty-humility/>>.
- Brandt, M.J., J.R. Chambers, J.T. Crawford, G. Wetherell, and C. Reyna. 2015. Bounded openness: The effect of openness to experience on intolerance is moderated by target group conventionality. *Journal of Personality and Social Psychology* 109: 549–568.
- Brandt, M.J., and J.T. Crawford. 2019. Studying a heterogeneous array of target groups can help us understand prejudice. *Current Directions in Psychological Science* 28: 292–298.
- Brandt, M. J. & Crawford, J. T. (in press). Worldview conflict and prejudice. In B. Gawronski (Ed.) *Advances in Experimental Social Psychology*.
- Brown, R. 2010. *Prejudice: Its social psychology*. 2nd ed. Malden, MA: Wiley-Blackwell.
- Byrne, D. 1969. Attitudes and attraction. *Advances in Experimental Social Psychology* 4: 35–89.
- Cassam, Q. 2016. Vice epistemology. *The Monist* 99 (2): 159–180.
- Christen, M., Alfano, M., & Robinson, B. (2014). The semantic space of intellectual humility. *CEUR Workshop Proceedings*, 1283.
- Church, I. 2016. The doxastic account of intellectual humility. *Logos & Episteme* 7 (4): 413–433.
- Church, I., & Samuelson, P. (2017). *Intellectual humility: An introduction to the philosophy and science*. Bloomsbury Publishing.
- Code, L. 1987. *Epistemic Responsibility*. Hanover, NH: University Press of New England.
- Correll, J., C.M. Judd, B. Park, and B. Wittenbrink. 2010. Measuring prejudice, stereotypes and discrimination. In *The SAGE handbook of prejudice, stereotyping and discrimination*, ed. J.F. Dovidio, M. Hewstone, P. Glick, and V.M. Esses, 45–62. Thousand Oaks, CA: Sage.
- Crawford, J.T., and M.J. Brandt. 2019. Who is prejudiced, and towards whom? The big five traits and generalized prejudice. *Personality and Social Psychology Bulletin* 45: 1455–1467.

- Crandall, C.S., A. Eshleman, and L. O'Brien. 2002. Social norms and the expression and suppression of prejudice: The struggle for internalization. *Journal of Personality and Social Psychology* 82: 359–378.
- Davis, D.E., K. Rice, S. McElroy, C. DeBlare, E. Choe, D.R. Van Tongeren, and J.N. Hook. 2016. Distinguishing intellectual humility and general humility. *The Journal of Positive Psychology* 11: 215–224.
- De Neys, W. 2006. Automatic–heuristic and executive–analytic processing during reasoning: Chronometric and dual-task considerations. *The Quarterly Journal of Experimental Psychology* 59 (6): 1070–1100.
- De Rooij, E.A., M.J. Goodwin, and M. Pickup. 2018. A research note: The differential impact of threats on ethnic prejudice toward three minority groups in Britain. *Political Science Research and Methods* 6 (4): 837–845.
- Driver, J. 1989. The virtues of ignorance. *The Journal of Philosophy* 86 (7): 373–384.
- Evans, J.St.B.T., and J. Curtis-Holmes. 2005. Rapid responding increases belief bias: Evidence for the dual-process theory of reasoning. *Thinking & Reasoning* 11: 382–389.
- Evans, J.St.B.T., and K.E. Stanovich. 2013. Dual-process theories of higher cognition. *Perspectives on Psychological Science* 8 (3): 223–241.
- Foddy, M., M.J. Pladow, and T. Yamagishi. 2009. Group-based trust in strangers: The role of stereotypes and expectations. *Psychological Science* 20: 419–422.
- Fricke, M. 2007. *Epistemic injustice: Power and the ethics of knowing*. Oxford: Oxford University Press.
- Goh, J.X., J.A. Hall, and R. Rosenthal. 2016. Mini meta-analysis of your own studies: Some arguments on why and a primer on how. *Social and Personality Psychology Compass* 10 (10): 535–549.
- Gregg, A.P., C.M. Hart, C. Sedikides, and M. Kumashiro. 2008. Everyday conceptions of modesty: A prototype analysis. *Personality and Social Psychology Bulletin* 34 (7): 978–992.
- Haddock, G., M.P. Zanna, and V.M. Esses. 1993. Assessing the structure of prejudicial attitudes: The case of attitudes toward homosexuals. *Journal of Personality and Social Psychology* 65: 1105–1118.
- Hazlett, A. 2012. Higher-order epistemic attitudes and intellectual humility. *Episteme* 9 (03): 205–223.
- Henry, P.J., and C. Reyna. 2007. Value judgments: The impact of perceived value violations on American political attitudes. *Political Psychology* 28: 273–298.
- Hoyle, R.H., E.K. Davisson, K.J. Diebels, and M.R. Leary. 2016. Holding specific views with humility: Conceptualization and measurement of specific intellectual humility. *Personality and Individual Differences* 97: 165–172.
- Jussim, L. (2012). *Social perception and social reality: Why accuracy dominates bias and self-fulfilling prophecy*. Oxford University Press.
- Kahneman, D. (2011). *Thinking, fast and slow*. Macmillan.
- Kidd, I.J. 2017. Epistemic vices in public debate: The case of 'new atheism'. In *New atheism: Critical perspectives and contemporary debates*, ed. C.R. Cotter, P.A. Quadrio, and J. Tuckett, 51–68. New York: Springer International Publishing.
- Koch, A., R. Imhoff, R. Dotsch, C. Unkelbach, and H. Alves. 2016. The ABC of stereotypes about groups: Agency/socioeconomic success, conservative-progressive beliefs, and communion. *Journal of Personality and Social Psychology* 110 (5): 675–709.
- Krumrei-Mancuso, E., and S. Rouse. 2016. The development and validation of the comprehensive intellectual humility scale. *Journal of Personality Assessment* 98 (2): 209–221.
- Krumrei-Mancuso, E.J. 2018. Intellectual humility's links to religion and spirituality and the role of authoritarianism. *Personality and Individual Differences* 130: 65–75.
- Leary, M.R., R.J. Diebels, E.K. Davisson, K.P. Jongman-Sereno, J.C. Isherwood, K.T. Raimi, et al. 2017. Cognitive and interpersonal features of intellectual humility. *Personality and Social Psychology Bulletin* 43 (6): 793–813.
- Lord, C.G., and C.A. Taylor. 2009. Biased assimilation: Effects of assumptions and expectations on the interpretation of new evidence. *Social and Personality Psychology Compass* 3 (5): 827–841.
- McCrae, R.R., and P.T. Costa. 1987. Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology* 52 (1): 81–90.
- Montoya, R.M., R.S. Horton, and J. Kirchner. 2008. Is actual similarity necessary for attraction? A meta-analysis of actual and perceived similarity. *Journal of Social and Personal Relationships* 25 (6): 889–922.
- Montmarquet, J. 1993. *Epistemic virtue and doxastic responsibility*. Lanham, MD: Rowman & Littlefield.
- Nietzsche, F. (1878/1986). *Human, All Too Human*. Translated by R. J. Hollingdale. Cambridge University Press.
- Riek, B.M., E.W. Mania, and S.L. Gaertner. 2006. Intergroup threat and outgroup attitudes: A meta-analytic review. *Personality and Social Psychology Review* 10: 336–353.
- Roberts, R.C., and W.J. Wood. 2003. Humility and epistemic goods. In *Intellectual virtue: Perspectives from ethics and epistemology*, ed. M. DePaul and L. Zagzebski, 257–280. Oxford: Oxford University Press.
- Roberts, R. C., & Wood, W. J. (2007). *Intellectual virtues: An essay in regulative epistemology*. Oxford University Press.

- Rushing, S. 2013. What is Confucian humility? In *Virtue ethics and Confucianism*, ed. S. Angle and M. Slote, 173–181. New York: Routledge.
- Schönbrodt, F.D., and M. Perugini. 2013. At what sample size do correlations stabilize? *Journal of Research in Personality* 47 (5): 609–612.
- Sibley, C.G., and J. Duckitt. 2008. Personality and prejudice: A meta-analysis and theoretical review. *Personality and Social Psychology Review* 12 (3): 248–279.
- Sibley, C.G., J.F. Harding, R. Perry, F. Asbrock, and J. Duckitt. 2010. Personality and prejudice: Extension to the HEXACO personality model. *European Journal of Personality* 24 (6): 515–534.
- Sidanius, J., N. Kteily, S. Levin, F. Pratto, and M. Obaidi. 2016. Support for asymmetric violence among Arab populations: The clash of cultures, social identity, or counterdominance? *Group Processes & Intergroup Relations* 19: 343–359.
- Simon, H.W., N.N. Berkowitz, and R.J. Moyer. 1970. Similarity, credibility, and attitude change: A review and a theory. *Psychological Bulletin* 73 (1): 1,(January–16.
- Sloman, S.A. 1996. The empirical case for two systems of reasoning. *Psychological Bulletin* 119: 3–22.
- Snow, N.E. 2018. Intellectual humility. *The Routledge Handbook of Virtue Epistemology*: 178–195.
- Sosa, E. 2007. *Apt belief and reflective knowledge*. Oxford: Oxford University Press.
- Sperber, D., F. Clément, C. Heintz, O. Mascaro, H. Mercier, G. Origgi, and D. Wilson. 2010. Epistemic vigilance. *Mind & Language* 25 (4): 359–393.
- Spiegel, J.S. 2012. Open-mindedness and intellectual humility. *Theory and Research in Education* 10: 27–38.
- Stanley, D.A., P. Sokol-Hessner, M.R. Banaji, and E.A. Phelps. 2011. Implicit race attitudes predict trustworthiness judgments and economic trust decisions. *Proceedings of the National Academy of Sciences* 108 (19): 7710–7715.
- Stephan, W.G., R. Diaz-Loving, and A. Duran. 2000. Integrated threat theory and intercultural attitudes: Mexico and the United States. *Journal of Cross-Cultural Psychology* 31: 240–249.
- Stephan, W.G., O. Ybarra, C.M. Martinez, J. Schwarzwald, and M. Tur-Kaspa. 1998. Prejudice toward immigrants to Spain and Israel: An integrated threat theory analysis. *Journal of Cross-Cultural Psychology* 29: 559–576.
- Tanesini, A. 2018. Intellectual humility as attitude. *Philosophy and Phenomenological Research* 96 (2): 399–420.
- Tangney, J.P. 2000. Humility: Theoretical perspectives, empirical findings and directions for future research. *Journal of Social and Clinical Psychology* 19 (1): 70–82.
- Velasco González, K., M. Verkuyten, J. Weesie, and E. Poppe. 2008. Prejudice towards Muslims in the Netherlands: Testing integrated threat theory. *British Journal of Social Psychology* 47: 667–685.
- Viechtbauer, W. 2010. Conducting meta-analyses in R with the metafor package. *Journal of Statistical Software* 36 (3): 1–48.
- Whitcomb, D., H. Battaly, J. Baehr, and D. Howard-Snyder. 2015. Intellectual humility: Owning our limitations. *Philosophy and Phenomenological Research* 94 (3): 509–539.
- Wolf, S. 1982. Moral saints. *Journal of Philosophy* 79 (8): 419–439.
- Wynn, K. 2016. Origins of value conflict: Babies do not agree to disagree. *Trends in Cognitive Sciences* 20: 3–5.
- Zagzebski, L. 1996. *Virtues of mind*. Cambridge University Press.

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